CLAIMS

What we claim is:

1. A communications system, comprising:

a plurality of mobile devices that each include a network subsystem and a positioning subsystem, the network subsystem automatically assembling a wireless network among the mobile devices for information transfer and automatically assigning at least one unique identification number to each mobile device, the positioning subsystem automatically generating position information of each mobile device; and

at least one control system coupled for information transfer with the plurality of mobile devices, the control system tracking and mapping individual positions of each mobile device using the position information and identifying each mobile device on the map using the identification number.

2. The system of claim 1, wherein communications among the mobile devices and the control system occur using at least one of High Frequency (HF) communications, Very High Frequency (VHF) communications, Ultra High Frequency (UHF)/microwave communications, cellular communications, satellite communications, and Public Switched Telephone Network (PSTN) communications.

3. The system of claim 1, wherein the positioning subsystem includes at least one of a Global Positioning System (GPS), a Radio Frequency Identification/Direction Finding (RFID/DF) system, an infrared (IR) system, an acoustic system, a triangulation system, and a signaling system.

4. The system of claim 1, wherein the information transfer includes voice information and data.

5. The system of claim 1, wherein the identification number is a media access control (MAC) address, wherein the MAC address is associated with routing packets having modified priorities, wherein the routing packets are high quality packets that

provide reliable communication between the plurality of mobile devices and the control system.

6. The system of claim 1, wherein the control system further comprises a graphical user interface (GUI) that displays the individual positions of each mobile device on a three-dimensional map.

7. The system of claim 1, wherein the identification number is a media access control (MAC) address, wherein location-based multicast group Internet Protocol (IP) addressing is used to map the individual positions of each mobile device within an incident scene.

8. A portable communication device, comprising:

a network system that automatically assembles a wireless network among other portable communication devices and control devices in an area and automatically assigns a unique identification number to each portable communication device;

a communication system that receives and transmits voice and data communications over the wireless network using at least one of High Frequency (HF) communications, Very High Frequency (VHF) communications, Ultra High Frequency (UHF)/microwave communications, cellular communications, satellite communications, and Public Switched Telephone Network (PSTN) communications; and

a positioning system that includes Global Positioning System (GPS) components and at least one location sensor, the positioning system automatically determining a position of the device periodically and automatically transferring the position to at least one of the control devices via the wireless network.

9. A method for automatically tracking and communicating among mobile devices, comprising:

automatically assembling a wireless network among a plurality of mobile devices and control systems in an area, wherein assembling includes adding mobile devices and

control systems to the wireless network as they arrive in the area and removing mobile devices and control systems from the wireless network as they depart the area;

receiving voice and data communications from each of the mobile devices of the wireless network, wherein the data communications include position and identification information of each mobile device of the wireless network;

tracking a position and status of a mobile device using the position and identification information; and

generating a map of an engagement and displaying individual positions, tracks, and identifications of each mobile device of the wireless network using the position and identification information.

10. The method of claim 9, further comprising:

comparing information of the voice and data communications with historical scenario and response information;

generating predictions of engagement progress using results of the comparison;

displaying the predictions on the map; and

updating the historical scenario and response information to include at least one of the information of the voice and data communications and the generated predictions.

11. The method of claim 9, further comprising:

comparing information of the voice and data communications with historical scenario and response information;

generating recommended courses of action using results of the comparison;

displaying the recommended courses of action on the map; and

updating the historical scenario and response information to include at least one of the information of the voice and data communications and the generated recommended courses of action.

12. The method of claim 9, wherein tracking a position and status further comprises:

generating a historical position trace for each first responder; and

displaying the position trace on the map.

13. The method of claim 9, further comprising receiving sensor data from at least one sensor of at least one mobile device.

14. The method of claim 13, further comprising:

comparing the sensor data with historical scenario and response information;

generating predictions of engagement progress using results of the comparison;

displaying the predictions on the map; and

updating the historical scenario and response information to include at least one of the sensor data and the generated predictions.

15. The method of claim 14, further comprising generating recommended courses of action using at least one of the results of the comparison and the predictions.